

What is Dietary Fibre?

Dietary fibre is the part of plants taken as food, which passes mostly undigested into the large bowel (colon). There are two major types of fibre, soluble and insoluble. Some fibre is insoluble and supports the plant structure, other fibre is soluble, such as vegetable gums. Animal foods such as meat or eggs have no fibre.

The definition of fibre now includes some components of what is called resistant starch (i.e. starch resistant to enzymes produced by humans), non starch polysaccharides such as cellulose and gums, and lignin. These types of fibre are found in a variety of foods and have a range of different health benefits.

Soluble Fibre

Soluble fibre can help lower LDL ('bad') cholesterol, while maintaining the HDL ('good') cholesterol. Soluble fibre is mostly used in the first part of the large bowel. It is found in fruit and vegetables and some cereals (e.g. oats) and especially in legumes (dried peas, beans and lentils).

Insoluble Fibre

Insoluble fibre is more resistant to digestion and is still present in the lower part of the large bowel where it can be fermented by bacteria and produce more special fatty acids (eg butyric acid). This type of fibre is found mainly in wholegrain cereal foods, especially wheat. Insoluble fibre has an important role in preventing constipation by producing softer bulkier stools.

Both soluble and insoluble fibre are needed for good health. Foods high in fibre tend to be low in fat and fit well into weight reduction, low fat and diabetic diets.

Resistant Starch

Resistant starch is found in cereals, vegetables and fruits, like other fibres. Sometimes starches, which are usually well digested, develop more resistant starches as they cool after cooking. Cooked cold potato is one example. Some grains such as high amylose maize starch, are naturally high in resistant starch; new bread products are available containing 'high maize' flours. Resistant starch is fermented in the gut by bacteria in much the same way as other fibres.

How can Fibre Help You?

In the large bowel fibre is partly digested by bacterial fermentation producing special fatty acids which are essential for a healthy bowel. Fibre provides bulk and can also hold extra water. This action helps prevent constipation, haemorrhoids and diverticular disease and may be protective against bowel cancer. A high fibre diet is also associated with a lower risk of heart disease. Foods high in fibre are digested more slowly and this slows the rise in blood glucose after eating, which is useful for people with diabetes.

How Much Fibre Should You Eat?

Approximately 30 grams of fibre per day is recommended. Most Australians only eat around 20 grams per day. If your current diet is low in fibre increase fibre slowly to help avoid abdominal discomfort or wind.

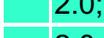
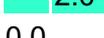
Can I Have Too Much Fibre?

Large amounts of pure or unprocessed brans are undesirable. They can bind essential minerals like iron, and also produce excessive abdominal flatulence ('wind'), pain and loose bowel actions. Limit to two tablespoons per day. Beans can be a problem. To reduce the gas when using dried beans, soak the beans for 18 hours to remove a large percentage of the oligosaccharides (these ferment in the colon to release gas). Throw away the soaking water and cook in fresh water.

Fibre Content of Some Foods - Check Your Fibre Score

(Does not include resistant starch)

Food	Approximate Fibre (g)										
		1	2	3	4	5	6	7	8	9	
Bread, wholemeal	1 slice	■ ■ 2.0									
Bread, mixed grain	1 slice	■ 1.0									
Bread, white	1 slice	■ 1.0									
Brown rice, boiled	1/2 cup	■ ■ 2.0									
White rice, boiled	1/2 cup	■ 1.0									
Unprocessed Bran	2 tabsp	■ ■ ■ 4.0									
Wh/meal Pasta, ckd.	1/2 cup	■ ■ ■ 4.0									
Pasta, white boiled	1/2 cup	■ 1.0									
Uncle Toby's Bran Plus	1/2 cup (30 g)	■ ■ ■ ■ ■ ■ ■ ■ ■ ■ 12.1									
All Bran	1/2 cup 8.6g	■ ■ ■ ■ ■ ■ ■ ■ 8.1									
Bran Flakes	1/2 cup	■ ■ ■ 4.0									
Weet-Bix Hi Bran	2 biscuits	■ ■ ■ ■ ■ ■ ■ 7.0									
Weet-Bix, Vita-Brits	2 biscuits	■ ■ ■ 3.0									
Porridge, cooked	1/2 cup	■ ■ 2.0									
Cornflakes	1/2 cup	0.0									
Potato, boiled with skin	1	■ ■ ■ 3.0									
Peas	1/3 cup	■ ■ ■ 3.0									
Potato, boiled & peeled	1	■ ■ 2.0									
Carrots, boiled	1/3 cup	■ ■ 2.0									
Corn	1/3 cup	■ ■ 2.0									
Mashed potato	1/2 cup	■ 1.0									
Beans, green, boilde	1/3 cup	■ 1.0									
		■ ■ ■ ■ ■ ■ ■ 7.0									

Baked Beans	1/2 cup		7.0
Lentils, boiled	1/3 cup		3.0
Fruit with skin (eg apple)	1 medium		3.0
Banana	1 medium		3.0
Sultanas	1/3 cup		3.0
Prunes	3		2.0;
Orange	1 medium		2.0
Juice, orange	200 ml		1.0
Nuts, mixed	30 g		2.0
Cake, plain			0.0
Biscuits, plain/sweet	8-10g		0.0

Tips to Increase Your Fibre Score

How Much Per Day

Use wholegrain breads and cereals 7 serves
 Fruit (not juice) 2 serves
 Vegetables 5 serves
 (eat skins where possible)

Try:

Dried peas, beans and lentils) 1/2 cup cooked
 add to soups and casseroles
 or eat bean salad or baked beans
 Try nuts seeds and dried fruit as a snack

Low Fibre Foods

Fruit juices
 Vegetable juices
 Fatty foods, fast foods and sugar
 Refined cereal products made from white flour

What About Eating Out?

Ask for wholemeal rolls, choose side salad and vegetables, include fruit for dessert.
 Lebanese roll with Tabbouli (cracked wheat) salad, wholemeal pizzas, vegetable soups,
 fresh fruit salad

Remember 2/3 of your plate is best covered by plant food, keep meat or other animal foods to 1/3

Commercial Fibre Supplements

These do add fibre to your diet and but do not have other useful nutrients gained by eating whole foods. They can be an advantage if appetite limits total intake. They are not habit forming and do not contain chemical laxatives. If you are eating away from home and

wholegrain food is difficult to obtain, they may be a useful extra. Try packing your own cereal instead!

Fluids

Dietary fibre absorbs water so it is important to drink plenty of fluids. Aim for at least 8 cups of fluid per day.

Exercise

If you suffer from constipation it is important to exercise regularly.

References:

Dietary Fibre, Non-Starch Polysaccharides and Resistant Starch - A Review P.A. Baghurst, K.I. Baghurst and S.J. Record
CSIRO Report Supplement to Food Australia March 1996

Sample Menus

High Fibre	Fibre (g)	Low Fibre	Fibre (g)
Breakfast			
1/2 cup BranFlakes TM + milk	4	1/2 cup CornFlakes TM + milk	0
2 wholemeal toast + spreads	4	2 white toast + spreads	2
Morning Tea			
1 orange	2	2 biscuits	0
Lunch			
2 wholemeal sandwiches with cheese & salad	8	2 white bread ham sandwiches	4
1 orange juice	1	Soft drink	0
Afternoon Tea			
2 wholemeal biscuits	1	1 Slice cake	0
Evening Meal			
Marinated chicken, grilled	0	Marinated chicken,Grilled	0
1 potato with skin	3.5	1/2 cup mashed potato	1
Peas (1/3 cup)	3	Peas (1/3 cup)	3
Carrot (1/3 cup)	2	Carrot (1/3 cup)	2
1 slice wholemeal bread	2	1 slice white bread	1
1 apple	2	Icecream	0
1 fruit yoghurt	0		
Supper			
Dried fruit	3	Lollies / Chocolates	0
Total	36.5	Total	13